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Reply to Office Action dated December 17, 2003

REMARKS

After entry of this Amendment, claims 1, 3-17, 37, 39-40, 46-57 are pending in the application. Claims 1, 4, 5, 6, 10, 12, 13, 14, 15, 40 and 46 have been amended. Claims 36 and 38 are cancelled without prejudice. New claims 47-57 have been added.

Claims 5, 9 and 11 are rejected under 35 U.S.C. § 112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claim 5 has been amended to more clearly describe the engagement between the raised flanges and the first modular die support bearing rollers. Claim 9 has been amended to positively recite a first modular die support. As explained in the specification, in one embodiment shown in Figure 1, there is a first modular die support 38 having two bearing assemblies 39 and 40 (the second modular die support includes bearing assemblies 67 and 68). In claim 11, the Examiner takes issue with the limitation of claim 1 that the first modular die support is attached directly to the base and rejects claim 11 as reciting a spacer between the modular die support and the base. Claim 11 positively recites "one spacer positioned between the first and second modular die support." As Claim 11 positively recites the spacer between the modular die supports and not between the base and first modular die support, Applicant requests that the rejection be withdrawn.

Claims 1, 3, 8, 9, 13, 16, 17, 36 and 46 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,770,078 to Gautier. The Examiner

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contends that Gautier includes four columns (31), a base (12), a cap, a cross member (15), a first die support module having spaced bearings (13) fixed directly to the base (12A) a second die support module having spaced bearings (16), and a pressure device (21, 22). Applicant notes several express limitations of the Gautier disclosure. The only die rolls usable in the Gautier include shafts or journals 9 and 10 which are supported in cylindrical roller bearings 3 and 4 positioned in a slot formed in one side of the frame. Col. 3 ll. 17-24, Figures 2 and 4. The cylindrical roller bearings are supported horizontally by the frame and at least to some extent in the vertical direction (lower bearing resting on the bottom of slot in Figure 2). Col. 3 ll. 34-38. On the opposite ends of the die rolls, the die rolls are supported by rollers 13 positioned in a concave formation in the sole plate or cradle 12 forming part of the frame 7. Col. 3 ll. 25-30. The rollers 13 provide vertical support of the die rolls allowing only one prior art set of cylindrical roller bearings 6 shown in Figure 1 to be eliminated. Col. 3 ll. 34-38.

Claim 1 has been amended to more positively recite the first modular die support as providing the exclusive support for the first rotary die vertically, horizontally transverse to the first axis of rotation, and longitudinally along the first axis of rotation. Gautier's lower die supports (rollers 13 and roller bearing 4) do not exclusively support and confine the lower die in the claimed directions, but rather, the roller bearing 4 relies on the asserted columns 31 to limit movement horizontally and longitudinally along the axis of rotation. Col 3 ll. 34-38. Claim 4 has been amended to depended from claim 9 to clarify one embodiment of the present invention. Claim 9

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has been amended and is not anticipated by Gautier as claim 9 positively recites that the first and second modular die supports each comprise a first and a second bearing assembly each including angularly spaced rollers. It is clear that the Gautier disclosure is expressly limited to and requires cylindrical rolling bearings 3 and 4 for supporting and confining each die roll. Gautier does not teach or suggest a modular frame or rotary die apparatus that allows complete removal of all cylindrical roller bearings.

Claims 36 and 38 have been cancelled without prejudice. Claim 46 has been amended to positively claim that the columns provide sufficient clearance for the die rolls to be axially removed between both pairs of columns. Gautier, although it permits axial removal of the rotary dies from one side of the frame (Figure 5), expressly discloses reliance on cylindrical roller bearing blocks in a slot in the side plate on the other end thereby prohibiting removal of the dies from that direction. As such, Claim 46 is not anticipated and not rendered obvious in view of the references of record.

Claims 1, 3-6, 8, 9, 10, 13, 17, 36 and 46 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Gautier in view of U.S. Patent No. 4,759,247 to Bell. The Examiner contends that Gautier discloses all of the limitations except a radial flange on the lower rotary die and that Bell discloses that is well known for both dies to have peripheral flanges (26, 28) contacting one another. The Examiner concludes that it would have been obvious to apply the peripheral contacting flanges of Bell to Gautier rendering the cited claims obvious.

Applicant brings to the Examiner's attention that claims 1, 8, 9, 10, 13, 16, 17 and 46 do not include the limitation of a peripheral contact or raised radial

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flange and therefore the rejection should be withdrawn with respect to these claims.

With respect to claims 4-6 and 14-16, these claims have been amended to more particularly recite the relationship between the raised radial flange and the first modular die support bearing rollers. As best seen in Figure 2, Applicant's bearing rollers 44 do not rollingly engage the outer circumferential surface of the radial flange 122, but rather, rollingly engage the die roll axially inboard of the raised radial flange 122 operably engaging the interior raised surface or shoulder of radial flange 122 thereby limiting longitudinal movement of the first rotary die along the first axis of rotation.

The Gautier and Bell references merely provide raised surfaces serving as roller bearers which rollingly engage the outer surface of asserted peripheral flanges of the die rolls themselves. The Gautier and Bell raised surfaces and corresponding rollers do not provide any support or resistance from linear longitudinal movement of the rotary dies along their axis of rotation. Rather, Gautier and Bell rely exclusively on the cylindrical roller bearings mounted in the side plates of the frame, formed by the asserted columns, to prevent linear longitudinal movement of the rotary dies in the frame along the axes of rotation. Therefore, the above claims are not rendered obvious by Gautier in view of Bell or any of the references of record.

Claims 1, 3, 7, 8, 9, 13, 16, 17, 36, 40 and 46 are rejected under 35 U.S.C § 103(a) as being unpatentable over Gautier in view of the Bernal rotary die module (reference AS from the 23 May 01 I.D.S.). The Examiner contends that Gautier discloses all of the limitations except that Gauiter has one cross member

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instead of two. The Examiner contends that it would have been obvious to modify Gautier with the two cross members of Bernal rendering the above claims obvious. As shown in Gautier Figure 4, Gautier applies downward force on the upper die roll directly and axially inward of the frame side plate or asserted columns. Bernal's asserted cross members are positioned in the slot formed in the side plates and thereby rely on the side plates for support. Bernal further applies force directly to the cylindrical bearing blocks positioned in the side plates, not the die roll directly. The Gautier reference expressly teaches away from applying vertical force on the cylindrical roller bearings 3 and 4 like the Bernal apparatus negating any motivation or suggestion to combine the references. See Gautier col. 3 ll. 25-38; M.P.E.P. § 2145 X.D.2. Applicant further submits that the asserted simple substitution of the Bernal cross members in the position of the Gautier pressure members renders Gautier inoperable or unsatisfactory for its intended purpose as the substituted cross members would not be supported by the asserted columns and would require substantial adaptation or redesign to do so. The combination is therefore, improper. M.P.E.P. § 2143.01. As argued above with respect to the Gautier reference, the Bernal apparatus also relies on cylindrical roller bearings housed in side plates to support and restrain the die rolls vertically, horizontally and longitudinally along the axis of rotation. Therefore, the addition of the disclosure of Bernal to the disclosure of Gautier does not overcome the deficiencies of the Gautier reference discussed in detail above. The claims as amended are not rendered obvious by Gautier in view of Bernal or any other references of record.

Claims 1, 3, 8, 9, 13, 16, 17, 36-39 and 46 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Gautier in view of U.S. Patent No. 5,155,240 to Okuda. The Examiner contends that Gautier's columns are not cylindrical and it would have been obvious to modify Gautier with Okuda's asserted cylindrical columns of uniform cross section. Applicant traverses the rejection on several grounds. Okuda teaches a device for releasing and connecting drive spindles (1a, 1b,) to die rolls (8a, 8b). The Okuda device has a moving structural frame (17). The subject circular posts (13) are positioned within the spindle frame, as opposed to the rotary die frame, and simply serve as guides within the movable frame structure (17) to vertically guide the drive spindles (1a, 1b) to accommodate the distance between the journals of the die rolls. Okuda's coupling device for connecting the drive spindles between the pinion stand and die rolls is not a rotary die frame or structure supporting and confining the die rolls, but is merely an attachment to the rolls as part of the rotary drive mechanism. Okuda's use of the asserted vertical posts are simply vertical guides for the spindles and not structural or guide members for the cutting die rolls themselves which require significantly more support due to their weight and the forces imparted thereon as evidenced by the art through use of heavy side plates and cylindrical roller bearings. Second, as explained above the Gautier frame discloses a side plate for acceptance and engagement of cylindrical roller bearing blocks 3 and 4 to directly engage and support the die roll journals. These side plates have been completely eliminated by the present invention through the plurality of columns and modular die supports that are independent of and separated from the columns requiring no secondary machining.

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processes to accommodate or receive the die supports in the columns. There is no teaching, suggestion or motivation to replace the Gautier side plate or asserted columns 13 housing cylindrical roller bearings 3 and 4 with the cylindrical posts of Okuda. The Gautier reference expressly discloses a principal limitation of its design requiring one cylindrical roller bearing block 3 or 4 to receive the die roll shaft for each of the die rolls. The Gautier side plate supporting the cylindrical roller bearings is also not of uniform cross section (portion below the lower cylindrical roller bearing). The Examiner's suggested modification of Gautier to add Okuda's guide posts for vertical adjustment of the die rolls is therefore, directly against the stated objectives and teaching of Gauiter. The suggested substitution would render Gautier inoperable without some additional structure to adapt the circular posts of Okuda to support the cylindrical roller bearings 3 and 4 and is an improper substitution for Gautier's asserted columns (13), pursuant to M.P.E.P. §§ 2143.01, 2145 X.D.2.

Applicant's use of columns or rods serve as structure and a frame for the rotary dies. Applicant's columns or rods are not used for vertical adjustment for the die rolls as asserted by the Examiner. The relative vertical position of the dies is dictated by the diameter of the dies themselves. In an alternate embodiment, the cylindrical roller bearing blocks and spacers determine the vertical position or spacing of the rotary dies. It is respectfully submitted that the Examiner's showing in the broad cutting die art of the use of uniform cylindrical posts as vertical guides, not for the die rolls themselves, but for any attachment or drive mechanism for the dies does not meet the burden of showing, incentive, motivation and suggestion to combined the asserted

teachings in the references. The Examiner is requested to cite a reference teaching the claimed structure and function in order to formulate a proper prima facie obviousness rejection.

Claim 12 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Gautier in view of Bell and further in view of Okuda. The Examiner contends, as above, that Gautier does not include cylindrical columns. For the reason stated above, neither is it permissible to apply the cylindrical posts of Okuda to Bell or Gautier as Bell and Gautier each require cylindrical roller bearing blocks housed and confined in frame side plates or columns and are not adaptable to the use of Okuda's circular guide posts for the reasons stated above.

New claims 47-57 have been added and are believed to be allowable over the references of record on at least the basis that no references of record teach or suggest a rotary die frame that utilizes interchangeable die supports to greatly increase the usage, flexibility and efficiency of the rotary die frame.

It is respectfully submitted that this Amendment traverses and overcomes all of the Examiner's rejections and pending claims 1, 3-17, 37, 39-40 and 46-57 are in a condition for allowance, notice of which is requested.

If the Examiner feels that prosecution of the present application can be expedited by way of an Examiner's amendment, the Examiner is invited to contact the

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Applicant's attorney at the telephone number listed below.

Respectfully submitted,

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